

Message Text

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PAGE 01 STATE 064103
ORIGIN SSM-05

INFO OCT-01 ISO-00 ONY-00 /006 R

DRAFTED BY SSM: J T MCANDREW/L JACOBS:JJ
APPROVED BY SSM: J T MCANDREW
NEA: D ZWEIFEL (SUBS.)
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C O N F I D E N T I A L STATE 064103

FOR WALLEN ONLY FROM MCANDREW

E.O. 11652: GDS

TAGS: MARR, EG, US

SUBJECT: AIR SURVEILLANCE RADAR FOR E-1

1. GENERAL ELECTRIC HAS NOW APPLIED FOR A MUNITIONS CONTROL LICENSE TO PROVIDE THE ASR-77 GROUND RADAR SYSTEM UNDER ITS CONTRACT WITH THE GOE FOR PHASE III OF THE E-1 PROJECT. NEA HAS ASKED WHETHER SUBSTITUTION OF THIS RADAR SYSTEM FOR THE AN/TPS-32 WOULD CAUSE ANY PROBLEMS FOR SFM.

2. LES JACOBS HAS CALCULATED THAT THE ASR-77 WOULD NOT CONSTITUTE A HEALTH HAZARD FOR PERSONNEL AT A DISTANCE GREATER THAN 160 METERS (480 METERS IF THE CURRENT U.S. STANDARD IS REDUCED TO ONE MILLIWATT PER CENTIMETER SQUARED.) WE WOULD APPRECIATE YOUR ADVICE AS TO WHETHER THE ASR-77 COULD INTERFERE SUFFICIENTLY WITH ANY OF THE
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SFM SENSOR OR COMMUNICATIONS SYSTEMS TO A DEGREE THAT WE WOULD REGARD AS UNACCEPTABLE.

3. THE ASR-77 IS A SANITIZED VERSION OF THE GE-592. ITS TECHNICAL CHARACTERISTICS AND COMPUTED POWER DENSITIES FOLLOW:

A. TRANSMITTER

FREQUENCY - 1215 TO 1400 MHZ

PEAK POWER - 25 KW

DUTY CYCLE - 15 PERCENT

B. ANTENNA

GAIN 39 DB

SCAN RATE 12 SEC./REV.

BEAMWIDTH: ELEVATION 2.0 DEGREES NOM, AZIMUTH 2.25 DEGREES.

4. IN ADDITION, THE RADIATING SIGNAL CONSISTS OF TWO CONTIGUOUS CHIRPED PULSES. THE RADAR IS AGILE AND CAN BE OPERATOR-CONTROLLED SO THAT THE CENTER FREQUENCIES OF CONSECUTIVE PULSES CYCLE AUTOMATICALLY OR REMAIN CONSTANT. THE FOLLOWING POWER DENSITIES WERE COMPUTED FOR SEARCHLIGHT OPERATION (POSSIBLE BUT REQUIRES A MANUAL OVERRIDE OF AN INTERLOCK SYSTEM), AND CONSTANT CENTER FREQUENCIES:

RANGE (KM)	PEAK POWER DENSITY (MW/M SQUARED)	AVG. POWER DENSITY DBM	DBM
10	163.2	22.1	13.97
20	41.4	16.2	7.95
30	17.7	12.6	4.32
40	10.2	10.13	1.87

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5. NEA IS ARRANGING A MEETING WITH AMBASSADOR LEWIS QUOTE WITHIN THE NEXT COUPLE OF DAYS UNQUOTE TO DISCUSS ONCE AGAIN THE RADAR QUESTION. THEREFORE, I HOPE YOU WILL BE ABLE TO GIVE US THE BENEFIT OF YOUR ADVICE SOONEST. VANCE

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